



# भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

(सड़क परिवहन और राजमार्ग मंत्रालय, भारत सरकार)

## National Highways Authority of India

(Ministry of Road Transport and Highways, Government of India)

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### NHA/Policy Guidelines/Road Safety/2022

#### Policy Circular No. 12.26/2022 dated 27<sup>th</sup> May, 2022

{Decision taken on E-Office File No. NHA/CGM(Legal)/RSA/2022/1 (Computer No: 128794)}

#### Sub.: NHA Road Safety Audit Policy - reg.

##### 1. Introduction:

Safe roads are a priority for NHA and Road Safety Audit (RSA) is an important means to achieve safer roads. This Policy Document is prepared to guide the Road Safety Audit process in NHA so that it is successful in helping the organization achieve the objective of safer roads. It is based on the recommendations of IRC on the subject, in IRC: SP: 88 and is a live document, to be updated from time to time, based on experience.

##### 2. What is Road Safety Audit?

Road Safety Audit is "a formal, systematic and detailed examination of a road project by an Independent and qualified team of auditors that leads to a report of the potential safety concerns in the project and recommendations to remove or reduce the impact of these safety issues."

It is a safety performance examination of an existing road or a future road by an independent audit team. The Audit can be conducted at any stage of a project, be it the project planning stage, the final design stage, development stage, construction stage, or O&M stage.

Road safety audit is:

- A formal process (not just an informal check).
- Conducted by persons who are independent of the design, construction and day-to-day supervision.
- Conducted by persons with appropriate qualification, training and experience.
- An assessment of road safety issues in a road design, a Traffic Management Plan for road works, a newly completed road scheme, or it can be the Identification of safety concerns on any existing road.

Just as importantly, a Road Safety Audit is not

- a check of compliance with standards.
- a substitute for regular design checks.
- a crash investigation.
- an opportunity to redesign a project which needs to be carried out separately.
- a name for a more detailed site inspection.
- a way of assessing or rating a project as good or bad.

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### **3. Why Road Safety Audit?**

The road safety problem involves three components - the human, the vehicle and the road. Research shows that the roads play a crucial role in road crashes. There are instances of geometric deficiencies, inconsistent pavement markings, missing (or wrong) road signs, traffic signals not operational and other such avoidable deficiencies. As a result of inadequate attention to needs of the vulnerable road users, pedestrians, cyclists and motorised two-wheeler riders are often exposed to risk, especially in case of highways passing through urban settlements and villages.

In case of unsafe roads, the community will pay a much higher price over the life of a road project than the initial capital cost. Hence, safe movement of people is of utmost importance. Road safety audit can identify the level of exposure and potential risk to different road users, for applying remedial measures and ensuring safety.

Road safety audit seeks to take an overall view of safety in a road project. It highlights safety issues and makes recommendations to minimize the effect of each. Road safety audit will not necessarily make the road totally "safe", but it does raise safety high on the decision making agenda and it does cause deliberate decisions to be made on the basis of carefully brought out road safety recommendations.

### **4. Objectives of Road Safety Audit:**

The main objective of Road Safety Audit is to minimize the risk of crashes occurring on a new road project/ an existing road and to minimize the severity of any crashes that do occur or are likely to occur.

There are other objectives too, including:

- To minimize the risk of crashes occurring on adjacent roads (especially at intersections).
- To recognize the importance of safety in road design so that the needs and perceptions of all road users are met, and to achieve a balance between needs where they may be in conflict.
- To reduce the long term costs of a new road project, bearing in mind that unsafe designs may be expensive (or at times even impossible) to correct at a later stage.
- To enhance the awareness of road safety engineering principles by all involved in the process of planning, designing, constructing, operating, managing and maintaining roads and highways.
- To advance the awareness of providing safe road schemes for non-motorized as well as motorized road users.

### **5. Stages of Road Safety Audit:**

There are five stages of a road project at which a road safety audit can be conducted. The earlier in the life cycle of a road that an audit is carried out, the easier and less costly it is to achieve improved safety. Early auditing at planning and design stages can achieve better safety results and usually at a much lower remedial cost.

#### **Stage 1 Feasibility Stage/Preliminary Design Stage:**

An audit on submission of the Draft planning or feasibility study report will examine features such as design standards, route choice and continuity with the existing adjacent network, horizontal and vertical alignments, cross sections and interchange/intersection layouts. Careful auditing at this early feasibility study stage can help to reduce the costs and lost time associated, with changes that may otherwise be brought about during later audits.



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The recommendations of Road Safety Audit of the draft feasibility study report including option study shall be incorporated in the Final Feasibility Report and the DPR Consultant shall certify regarding the same.

**Stage 2 Detailed Design stage (Detailed Project report Stage):**

This audit stage occurs on submission of Draft Detailed Project Report by the DPR consultant. Typical considerations include geometric layout, pavement markings, signals, lighting, road signs, intersection details, clearances to roadside objects (crash barriers/frangibility) and provision for vulnerable road users. Attention to detail at this design stage can do much to reduce the costs and disturbance associated with last minute changes that may otherwise be brought about with a construction stage audit or a pre-opening stage audit.

The recommendations of Road Safety Audit of the Draft Detailed Project Report (DPR) shall be incorporated in the Final Detailed Project Report (DPR) and the DPR Consultant shall certify regarding the same.

**Stage 3 Development Stage:**

The Road Safety Audit for development stage shall include audit of the proposed detailed design of the project highway and of the Traffic Management Plan for the project road, identifying enhancements that may be required.

**Stage 4 Construction Stage:**

**Stage 4.1 Construction Stage:**

This stage of audit takes place during construction of the road works. It examines the implementation of the traffic management plans and it also inspects the provisions for road safety at the road work site during the construction period. Typical issues examined include the provisions for pedestrian safety, advanced warning zones, adequate transition zone lengths, worker safety, effective numbers of reflective signs, safe delineation, credible speed limits, temporary crash barriers, lighting and diversions. The implementation of pending accepted recommendations of previous audits and implementation of provisions bearing on safety shall also be verified.

**Stage 4.2 Pre-Opening Stage:**

This audit involves a detailed inspection of the new road project immediately prior to its opening. Although most road projects are constructed "under traffic" there is a time just before the Contractor hands over the project when the project is almost complete and when a pre-opening stage audit is undertaken. The new road should be driven, ridden and walked (as appropriate) by the audit team to ensure that the safety needs of all road users are provided for.

A night-time Inspection is particularly important at this stage to check installation and visibility of signs, markings, delineation, lighting and any other night time/low light related Issues.

**Stage 5 Safety Audit of Existing Roads:**

The existing road may be a well-established road dating back decades or it may be a recently upgraded or rehabilitated road. The audit of existing road aims to ensure that the safety features of a road are compatible with the functional classification of the road. It also aims to identify any feature that may develop over time into a safety issue (such as a tree blocking sight lines at an intersection).



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A number of the safety issues found in these audits should be readily addressed by simple and low cost maintenance practices (e.g. tree trimming, sign and line marking renewal, and roadside hazard issues). As such, there are benefits in having maintenance crews trained in road safety reviews so that they can apply their safety knowledge routinely to address these.

## 6. Road Safety Audit process

The Road Safety Audit process has steps as tabulated below:

S. No.	Road Safety Audit Steps	Responsibility
i.	Appointment of Road Safety Auditor/Consultant as per extant NHAI Policy Guidelines	RO in consultation with Technical Division (Separately for Stages 1&2, for Stages 3 &4 and for Stage 5)
ii.	Road Safety Audit Team to visit the site and conduct Road Safety Audits as per the periodicity notified by Authority and Terms of Reference	Road Safety Consultant/Auditor Team
iii.	Provide information (Drawings and Design reports, Accident data from NHAI database and any other data required by Road Safety Audit team)	Project Director along with Designer/DPR Consultant /IE /AE /Contractor /Concessionaire
iv.	Hold a commencement meeting - outline the project and discuss the audit ahead. The minutes of the meeting should be prepared and circulated to all concerned.	Project Director along with DPR Consultant and Road Safety Audit Team for stage 1 and 2 Audit.  Project Director along with designer, AE/IE/ Contractor/ Concessionaire representatives and Road Safety Audit Team in case of Stage 3, 4 and 5 Audit.
v.	Assess the drawings and design reports for safety issues	Road Safety Auditor/ Consultant
vi.	Inspect the site during day time and night time.	Road Safety Auditor/ Consultant
vii.	Write the Road Safety Audit report with observations and recommendations as per format given in IRC: SP: 88 and submit the Road Safety Audit report in hard copy as well as on Datalake.	Road Safety Audit Consultant Team Leader with assistance from the team
viii.	Hold a completion meeting - to discuss the key safety issues and to clarify outstanding matters. The minutes of the meeting should be prepared and circulated to all concerned.	Project Director along with DPR Consultant for stage 1 and 2 Audit.  Project Director along with designer, AE/IE/ Contractor/ Concessionaire representatives and Road Safety Audit Team in case of Stage 3,4 and 5 Audit.

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ix.	Provide response to the Road Safety Audit report, referring to each and every audit recommendation.	Project Director NHAI in consultation with DPR Consultant for Stage 1 & 2 audit.  Project Director NHAI in consultation with AE/IE for stage 3,4 and 5 audit.
x.	Acceptance/ non-acceptance of the Road Safety Audit observations and recommendations.	Regional Officer, based on the recommendations/ comments of Project Director
xi.	Follow up and implement all agreed recommendations and changes.	DPR Consultant/ Designer/ Contractor/ Concessionaire in consultation with IE/AE on the directions of Project Director/RO.

#### 7. Roles of Key Stake Holders:

The roles and responsibilities of key stake holders are tabulated below:

Sl. No.	Stake holder	Roles and responsibilities
i.	Road Safety Cell at NHAI HQ	<ul style="list-style-type: none"><li>To update the Road Safety Audit Policy time to time as and when needed.</li><li>To empanel Road Safety Consultants for Road Safety Audits.</li><li>To monitor and review the progress and quality of Road Safety Audits.</li></ul>
ii.	Technical Divisions at NHAI HQ	<ul style="list-style-type: none"><li>To ensure that the recommendations of Road Safety Consultant/ team at the Feasibility and DPR Stage are incorporated in the Final Feasibility Report and Final DPR.</li><li>To ensure that DPR Consultant has certified incorporation of the recommendation of Road Safety Consultant/Team in Final Feasibility report and Final DPR.</li><li>To review the compliance of road safety audit reports.</li><li>Reviewing and compiling Road Safety Audit reports to identify possible improvements to NHAI's design and operation standards and guidelines.</li></ul>



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iii.	NHAI Regional Officer	<ul style="list-style-type: none"><li>• To appoint Road Safety Consultants for audit of all projects for various stages.</li><li>• To ensure compliance of recommendations of Road Safety Auditor/ Consultant.</li><li>• To ensure conducting of the Road Safety Audit of Detailed Project Report and while submitting proposal to Headquarter for invitation of bids for civil works, to ensure incorporation of relevant provisions in the bid documents.</li><li>• To ensure that non-compliances are dealt with effectively in terms of the contract provisions.</li></ul>
iv.	NHAI Project Director	<ul style="list-style-type: none"><li>• Attend commencement and completion meetings</li><li>• To seek report on compliance of the recommendations of Road Safety Consultant from IE/AE and ensure/verify compliance of all safety related contract provisions.</li><li>• To ensure that non-compliances are dealt with effectively in terms of the contract provisions.</li></ul>
v.	Authority Engineer/ Independent Engineer	<ul style="list-style-type: none"><li>• To ensure that all the Road Safety Provisions stipulated in the Contract Agreement and relevant IRC provisions including that of IRC: SP: 55 are implemented timely and effectively.</li><li>• To ensure that the approved diversion plans, work-zone traffic management plan and Road Safety plan are implemented timely and effectively.</li><li>• To ensure compliance of recommendations of Road Safety Consultant/ Auditor.</li><li>• To timely submit the compliance report to project director NHAI.</li><li>• To ensure that non-compliances are dealt with effectively in terms of the contract provisions.</li></ul>
vi.	DPR Consultant/ Design Team	<ul style="list-style-type: none"><li>• To ensure that all the Road Safety Provisions stipulated in the relevant IRC publications are incorporated in the Feasibility report and the Detailed Project report</li><li>• Attend commencement and completion meetings</li><li>• Provide relevant information to Road Safety Audit team</li><li>• Act upon and supports the client to provide response to audit recommendations</li><li>• To ensure and certify that the recommendations of Road Safety Team/Consultant/Auditor have been incorporated in the Final feasibility Report and Detailed Project Report/ Final Design.</li><li>• To include the relevant and necessary Road Safety provisions of DPR in the Schedule B &amp; C of the Draft Contract Agreement.</li></ul>



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vii.	Concessionaire/ Contractor	<ul style="list-style-type: none"><li>• Express a commitment to road safety</li><li>• Consider safety audits as essential</li><li>• Attend commencement and completion meetings</li><li>• To implement all the Road Safety Provision stipulated in the Contract Agreement and relevant IRC provisions including that of IRC:SP: 55, timely and effectively.</li><li>• To implement the approved diversion plans, work-zone traffic management plan and Road Safety plan timely and effectively.</li><li>• To timely comply with the recommendations of the Road Safety Consultant/Auditor.</li><li>• To timely submit the compliance report to IE/AE for further necessary action.</li></ul>
viii.	Road Safety Consultant / Audit Team	<ul style="list-style-type: none"><li>• To conduct Road Safety Audit of the project stretch at various stages as per the Terms of reference, in accordance with IRC:SP:88.</li><li>• Hold commencement and completion meetings with the client and design team</li><li>• Identify safety issues in the proposed design</li><li>• Inspect the site during day as well as night</li><li>• Document safety concerns and makes constructive recommendations to reduce risk of crashes and their severity</li><li>• To confirm the compliance of accepted recommendations on site and to highlight non-compliance in the next Audit report, if needed.</li></ul>

#### 8. Guidelines for Management of Road Safety Audit:

- i. All projects will be audited for safety at all the stages mentioned above in Section 5.
- ii. The periodicity of audit shall be as notified by Authority from time to time.
- iii. By making changes at the design stage, road safety can be built in to new road projects and the risk to the future users of that road can be minimized. It is urged, therefore, to focus on design stage audits.
- iv. Based on findings of the Audit at feasibility stage, specific provisions for improving safety will be included in the contract document by PD/RO and Technical Division.
- v. Empanelment of Road Safety Consultants/Auditors will be done by NHAI HQ. Their performance will be monitored.
- vi. The engagement of Road Safety Consultants/Auditors for various stages will be done by the ROs.
- vii. The Auditors will submit their observations/recommendations in hard copy as well as through the Data-lake portal.
- viii. The observations/recommendations will be accepted/not accepted by the Regional Officer, based on the recommendations of Project Director.
- ix. Progress of Road Safety Audit and the quality of audit reports will be monitored at all levels and progress of the audit process shall be reported periodically to the Authority.



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- x. Maintain a training and awareness program. The Road Safety Audit findings be used in training workshops that includes officers, staff, designers and potential future auditors as participants to see for themselves some of the safety issues that arise in some road designs.
- xi. Examples of where road users have benefited because of the road safety improvements generated through the audit process, how staff members are learning new skills as a result of the process, shall be documented and apprised to the Authority periodically.
- xii. Ensure that road safety audit is promoted with continued energy and passion.
- xiii. Get feedback from auditors, designers and officers/staff, and then propose modification to the audit policy and the audit process to best suit its purpose, as experience grows.

**9. Administration of Road Safety Audit Program:**

The Road Safety Audit program will be administered by GM Road Safety Audit at NHAI HQ and the ROs in the states.

The responsibilities will include but not be restricted to the following:

- To monitor and review the progress and quality of Road Safety Audit.
- Establish Road Safety Audit training program.

**10. Monitoring and Evaluation of Road Safety Audit program:**

The Road Safety Audit (RSA) program will be monitored by CGM (Road Safety) quarterly to ensure the following:

- Road Safety Audits are being implemented on all projects.
- Road Safety Audit training is being conducted.
- The quality of Road Safety Audit teams and Road Safety Audit final reports are adequate.
- Road Safety Audits are resulting in the implementation of safety improvements.
- The Road Safety Audit program is working effectively in conjunction with other safety programs and initiatives of NHAI/MORTH.
- Modify the audit policy and the audit process to best suit its purpose, as experience grows

**11. Relevant IRC Codes and other Publications:**

Some of the relevant IRC publications are as under. This list is not exhaustive and other literature and publications may also be referred. Latest version of all the publications should be referred.

IRC:SP:88	Manual on Road Safety Audit
IRC:35	Code of Practice for Road Markings



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IRC: 67	Code of Practice for Road Signs
IRC:79	Recommended Practice for Road Delineators
IRC:SP:73	Manual of Specifications and Standards for Two Laning of Highways with Paved Shoulder
IRC:SP:84	Manual of Specifications and Standards for Four Laning of Highways
IRC:SP:87	Manual of Specifications and Standards for Six Laning of Highways
IRC:SP:99	Manual of Specifications and Standards for Expressways
IRC:65	Guidelines for Planning and Design of Roundabouts
IRC:99	Guidelines for Traffic Calming Measures in Urban and Rural Areas
IRC:SP:55	Guidelines for Traffic Management in Work Zones
IRC:119	Guidelines for Traffic Safety Barriers
IRC:103	Guidelines for Pedestrian Facilities
IRC:11	Recommended Practice for Design and Layout of Cycle Tracks
IRC:SP:41	Guidelines on the Design of At-Grade Intersections in Rural and Urban Areas
IRC:SP:90	Manual for Grade Separators and Elevated Structures
IRC:SP:91	Guidelines for Road Tunnels
IRC:92	Guidelines for the Design of Interchanges in Urban Areas
IRC:82	Code of Practice for Maintenance of Bituminous Roads Surfaces
IRC:87	Guidelines for Formwork, Falsework and Temporary Structures for Road Bridges
IRC:73	Geometric Design Standards for Rural (Non-Urban) Highways



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IRC:86	Geometric Design Standards for Urban Roads and Streets
IRC.SP:48	Hill Road Manual

12. This issues with the approval of the Competent Authority.

  
27/05/22

(Sanjay Kumar Patel)  
General Manager (Coord.)

To:

All Officers of NHAI HQ/ ROs/ PIUs/ CMUs/ Site Offices.

Copy to:

1. Hindi Officer for translation in Hindi.
2. Library for hosting the circular on library site.
3. Web Admin for circulation.